



# St. Anne's School

( Affiliated to C.B.S.E New delhi )

## CLASS-9



**Summer Vacation is probably the best time of the year for you all. With learning happening at all times, summer vacation can also be a time for learning with lots of activities around.**

**Here is a task for you to be completed during the vacation. Do remember to complete the given task after reading the criteria carefully.**

**You need to bring your research work to school on the first day of school without fail.**

### **Some Tips to make this holiday special:**

Get involved in indoor games. Play board games with your parents and sibling and show them who is the smartest

- **Watch good movies and try out writing about the positive and negative aspects of the film. Read interesting books and explore different genres of books online**

### **Some Do's and Don'ts during Summer Vacation:**

#### **Do's:**

- ✓ Do drink lots of water.
- ✓ Do wear light cotton clothes.
- ✓ Do have plenty of seasonal fruits like musk-melon, water-melon, orange, cucumber, etc.
- ✓ Do drink a glass of buttermilk at every meal.
- ✓ Do study for half an hour to one hour every day.

## Don'ts:

- ✓ Don't venture out of house in afternoon sun.
  - ✓ Don't have junk food.
  - ✓ Don't watch too much TV.
  - ✓ Don't waste time in being lazy.
  - ✓ Don't dirty your place of living.
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## HOLIDAY HOMEWORK (2020-21)

### MATHS

- (1) Find two rational numbers between 4 and 5.
- (2) Insert two rational numbers between  $\frac{2}{3}$  and  $\frac{3}{4}$ .
- (3) Rationalize the denominator:  
 $\frac{1}{\sqrt{5} + \sqrt{3}}$
- (4) Find : (a)  $(64)^{1/3}$  (b)  $(32)^{1/5}$
- (5) Find: (a)  $2^3 \cdot 2^5$  (b)  $7^{1/2} \cdot 8^{1/2}$
- (6) Write the coefficients of  $x^2$  in the following:  
(a)  $2 + x^2 + x$   
(b)  $5x^3 + 3x^2 - 5x + 10$
- (7) Find the value of the polynomial  $5x - 4x^2 + 3$  at (a)  $x = -1$  and (b)  $x = 2$
- (8) Find the remainder when  $x^4 + x^3 - 2x^2 + x + 1$  is divided by  $x - 1$ .
- (9) Find the value of  $k$ , if  $x-1$  is a factor of  $4x^3 + 3x^2 - 4x + k$ .
- (10) Factorize:  $y^2 - 5y + 6$
- (11) Write the coefficients of  $x^2$  in each of the following:  
(a)  $2 + x^2 + x$   
(b)  $2 - 3x^2 + x^3$
- (12) Classify the following as linear, quadratic and cubic polynomial:  
(a)  $x^2 + x$   
(b)  $x - x^3$   
(c)  $1 + x$   
(d)  $3x$
- (13) Factorize:  $12x^2 - 7x + 1$ .
- (14) Expand:  $(x + 2y + 3z)^2$ .
- (15) Expand:  $(2a - 3b)^3$ .
- (16) Plot the following points on a graph paper:  
(a)  $(3, 4)$   
(b)  $(-2, 3)$   
(c)  $(-5, -2)$   
(d)  $(4, -3)$

**(17) Plot the following points on a graph paper:**

**(a) P(3,0)**

**(b) Q(-4,0)**

**(c) R(0,5)**

**(18) In which quadrant following points lie:**

**(a) (4,6)**

**(b) (-2, 3)**

**(c) (-3, -4)**

**(d) (4, -2)**

**(19) Factorize: (a)  $27y^3 + 125z^3$  (b)  $64x^3 - 343y^3$**

**(20) Factorize:  $27x^3 + y^3 + z^3 - 9xyz$**

**(21) If  $x + y + z = 0$ , show that  $x^3 + y^3 + z^3 = 3xyz$**

**(22) Without actually calculating the cubes, find the value of each of the following: (a)  $(-12)^3 + (7)^3 + (5)^3$  (b)  $(28)^3 + (-15)^3 + (-13)^3$**

**(23) Evaluate: (a)  $(102)^3$  (b)  $(99)^3$**

**(24) Factorize:  $x^3 + 13x^2 + 32x + 20$**

**(25) Factorize:  $x^3 - 3x^2 - 9x - 5$**

**(26) Factorize:  $y^3 - 23y^2 + 142y - 120$**

**(27) Rationalize the denominator**

$$4 - \sqrt{5} / 4 + \sqrt{5}$$

**(28) Rationalize the denominator**

$$2 + \sqrt{3} / 2 - \sqrt{3}$$

**(29) Represent  $\sqrt{9.3}$  on the number line.**

**(30) Represent  $\sqrt{5}$  on the number line.**

**NOTE :- You have to do all the sums in a separate note book .**

### **ENGLISH-**

1. Drag yourself till the age of 55 and write a story that you will narrate to your next generation about all the corona affect what you have faced.
2. Find two idioms and phrases that suits the concepts of all the chapters you have read during online classes and write them along with the situation of particular chapter.
3. Write a letter to the editor telling about the healing condition of the earth during the pandemic of corona virus.

### **HINDI-**

एन. सी. ई. आर. टी. का श्रव्य कार्यक्रम सुने— डॉ. सलीम अली तथा इनके जीवन के बारे में लिखिए ।

प्रेमचंद के फटेजूते को आधार बनाकर परसाई जी ने एक व्यंग लिखा है आप भी किसी व्यक्ति की

पोशाक को आधार बनाकर एक व्यंग लिखिए।

कोई एक कविता या कहानी लिखिए, जिसमें आपके सपनों का वर्णन हो, जो आप जीवन में करना चाहते हो।

किन्हीं दो विषय पर शिकायती पत्र लिखिए ।

### **SCIENCE-**

1. Convert the following temperature to the degree Celsius scale

a. 293K

b. 470k

2. Give reason for the following observation

a. Naphthalene balls disappear with time without leaving any solid.

b. Why does our Palm feel cold when we put some acetone or petrol or perfume on it?

c. Why does a water in earthen pot become cool during summer?

3. Draw the structure of plant cell and animal cell?

4.a. Why lysosomes known as suicide bag?

b. Name the two organelles which contain their own genetic material.

**5. Differentiate between hypertonic, hypotonic and isotonic solutions?**

**6. a. How do substances like CO<sub>2</sub> and water move in and out of the cell?**

**b. Why is the plasma membrane called a selectively permeable membrane?**

**7. Derive the second equation of motion by the graphical method?**

**8. A motorboat starting from rest on a lake accelerates in a straight line at a constant rate of 3 m/s<sup>2</sup> for 8 s. How far does the boat travel during this time?**

**9. Explain**

**a. Why do you fall in the forward direction when a moving bus brakes to a stop and fall backward when it accelerates from rest.**

**b. Explain why some of the leaves may get detached from a tree if we vigorously shake its branch.**

**10. From a rifle of mass 4 kg, a bullet of mass 50g is fired with an initial velocity of 35 m/s. Calculate the recoil velocity of the rifle.**

**11. An object of mass 100 kg is accelerated uniformly from a velocity of 5 m/s to 8 m/s in 6 s. Calculate the initial and final momentum of the object. Also find the magnitude of force exerted on the object.**

**12. Derive the mathematical equation of the second law of motion.?**

## Social studies-

<b>INVESTIGATORY TOPIC THEME</b>	<i>Can we stop the Polar Ice caps from Melting? Climate &amp; Ice are not poles apart</i>
<b>OBJECTIVE</b>	<p>Students will explore the various solutions as to how humans can help preserve Antarctica and search for alternative energy sources that will provide solutions to reduce global warming.</p> <ol style="list-style-type: none"> <li>1. The total length of the project should not be more than 20 pages of A4 size sheets</li> <li>2. The project is to be handwritten and grade will be awarded based on the original drawings, illustrations and creative use of materials.</li> <li>3. The project will be presented in a neatly bound simple folder. Please avoid plastic cover, instead use handmade paper file. Colors suggested are – <b>Blue, Yellow and Green.</b></li> <li>4. The project report will be developed and presented in the following order: <ul style="list-style-type: none"> <li>• Page 1: Cover Page showing project title, student information, school and year.</li> <li>• Page 2: Table of Contents: List of contents with page numbers.</li> <li>• Page 3: Acknowledgements: Acknowledging persons who have guided on the project</li> <li>• Page 4: Project Overview: Aim, Methodology and experiences while doing the project.</li> </ul> </li> </ol>
<b>GUIDELINES</b>	<p><u>All the photographs &amp; sketches should be labeled and acknowledged.</u> Complete the data collected and present the project properly. Do not forget to give conclusion/observations/ finding/ recommendations at the end along with proper citation and references.</p>
<b>SUBJECT TASK</b>	<p><b>NOTE: No direct downloads from Internet except images</b></p>

<b>I. Social Science</b>	<p><b>The Earth’s surface is 70% water. We call it the Blue Planet for a reason! Over 98% of that water is liquid—mostly in the oceans, as well as rivers, lakes, ponds</b> <b>There’s <i>land ice</i>—ice that starts on land, like glaciers and the Antarctic and Greenland Ice Sheets. And there’s <i>sea ice</i>—frozen ocean water that forms, grows, and melts in the ocean.</b> <b>The Arctic region is an ocean, surrounded by land. Some sea ice covers this ocean year-round.</b></p>
	<p>Meanwhile, Antarctica is a continent that is 98% covered by ice. Antarctic sea ice is seasonal—it melts away and reforms every year. There are rapid changes occurring to <i>both</i> land ice and sea ice at the poles. These changes are mostly likely due to increasing air and ocean temperatures resulting from greenhouse gases emitted by human activities.</p> <ul style="list-style-type: none"> <li>◆ <i>Create a Poster to create awareness about melting of Antarctic Greenland Ice Sheets on a chart.</i></li> <li>◆ <i>Write a newspaper article focusing on the causes of earth getting hotter and hotter, its impact on climate specially melting of ice and five ways to overcome the situation.</i></li> </ul>